RiboShield™ **RNase Inhibitor**

- Highly thermostable
- Superior yields
- Versatile

RiboShield™ RNase Inhibitor is a recombinant protein that blocks the activity of a wide range of ribonucleases to reliably protect your RNA from RNase digestion. The inhibitor is designed for use in RNA-sensitive applications where the presence of even small amounts of RNase can be highly detrimental to RNA quality and experimental outcome.

Features

- Superior protection leading to better performance in RNA-sensitive applications
- Particularly suited to incorporation into saliva-based tests for SARS-CoV-2 detection
- Inhibits eukaryotic RNases, including RNase A, B and C
- Compatible with reverse transcriptases, RNA polymerases and Taq DNA polymerase
- Stable up to 65˚C for at least 30 minutes
- Ribonuclease and phosphatase free
- Ideal for long term storage of samples

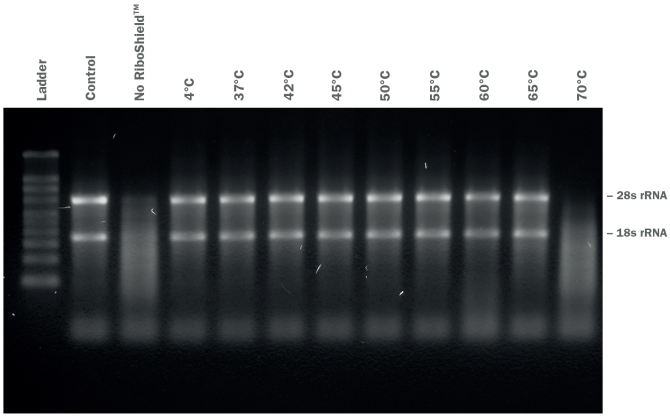

Figure 1. Stable at high temperatures

RiboShield™ RNase inhibitor was incubated at the indicated temperatures for 30 minutes. 40U of the inhibitor were then added to 1µg RNA and 5pg RNase A in 5x UltraScript buffer and incubated at 37˚C for 30 min. Samples were then loaded on a 1% agarose gel. RiboShield™ RNase Inhibitor can inhibit RNase A at temperatures up to 65˚C for at least 30 minutes.

Applications

- cDNA synthesis
- 1-step RT-PCR and RT-qPCR
- RNA purification
- RNA sequencing
- *In vitro* transcription and translation
- Saliva-based diagnostic testing for SARS-CoV-2

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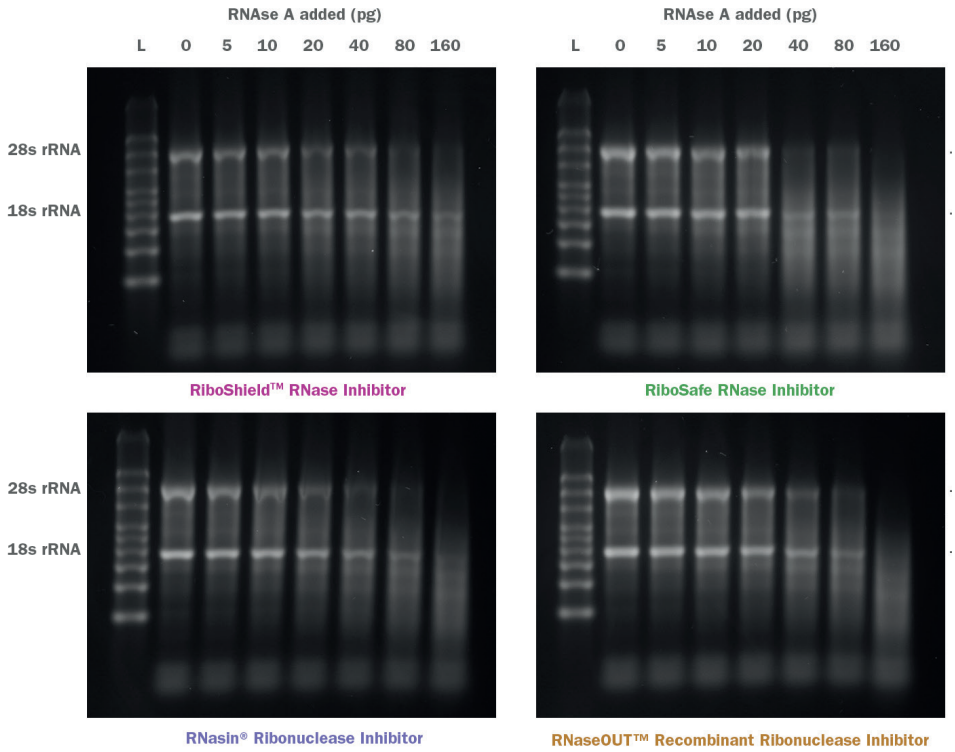

Figure 2. Superior protection against RNase A

RiboShield™ RNase Inhibitor and three competitor products (40U) were incubated with the indicated amounts of RNase A and 1µg RNA in 5x UltraScript buffer at 37˚C for 30 min. Samples were then loaded on a 1% agarose gel. L: Ambion RNA Millennium Markers. The RNase inhibitors used were PCR Biosystems' RiboShield™, Promega's RNasin®, Bioline's RiboSafe and ThermoFisher's RNaseOUT™.

RiboShield™ RNase Inhibitor offers the greatest RNA protection amongst the inhibitors tested.

Superior RNA protection

RiboShield™ RNase Inhibitor is designed for RNA-sensitive applications, including RT-qPCR, cDNA synthesis and RNA sequencing, to shield your RNA from degradation and provide higher yields and better performance as a result. When tested in RT-qPCR, RiboShield™ offers the greatest RNA protection in comparison to competing products (figure 2).

Stability at higher temperatures

RiboShield™ is able to perform over a wide range of reaction conditions and can sustain inhibition of RNase A at temperatures up to 65˚C for at least 30 minutes (figure 1). In addition, RiboShield™ does not contain cysteine residues that have been implicated in the oxidation sensitivity of the human placental version of the protein[1]. This results in an RNase inhibitor molecule that is not only thermostable, but also more resistant to oxidative stress.

Versatile

RiboShield™ can be used to block the activity of a wide range of ribonucleases, including eukaryotic RNases of the neutral type (RNases A, B and C). It does not inhibit RNases T1, T2, U1, U2, CL3, RNase I and H.

RiboShield™ does not hinder other enzymes such as reverse transcriptases, RNA polymerases or Taq DNA polymerase, making it compatible with many enzymatic reactions involving RNA. The inhibitor is inactivated by heating at 75˚C for 15 minutes.

1 Kim BM, Schultz LW, Raines RT. Variants of ribonuclease inhibitor that resist oxidation. Protein Science. 1999; 8(2):430-434.

Cat. no.	Product name	Pack size	Presentation
PB30.23-02	RiboShield™ RNase Inhibitor	2500 Units	1 x 62.5µL
PB30.23-10		10,000 Units	4 x 62.5µL

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